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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 18732PCT AWT:KR	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).	
International Application No. PCT/AU2003/000010	International Filing Date (day/month/year) 8 January 2003	Priority Date (day/month/year) 17 January 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. 7 E04F 15/10 15/22		
Applicant DESIGN DEVELOP COMMERCIALISE PTY LTD		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheet(s).

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 8 July 2003	Date of completion of the report 16 February 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  DAVID MELHUISE Telephone No. (02) 6283 2426

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description, pages 1, 3 - 13, as originally filed,
pages , filed with the demand,
pages 2, received on 19 January 2004 with the letter of 19 January 2004.
- ☒ the claims, pages 16, 19, as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages 14, 15, 17, 18, received on 19 January 2004 with the letter of 19 January 2004
- ☒ the drawings, pages 1 - 12, as originally filed,
pages , filed with the demand,
pages , received on with the letter of .
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1 - 39	YES
	Claims	NO
Inventive step (IS)	Claims 1 - 39	YES
	Claims	NO
Industrial applicability (IA)	Claims 1 - 39	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)Claims 1-39:

Claims 1 to 39 meet the requirements of PCT Articles 33(2) - (4). None of the prior art documents, or obvious combination thereof, disclose a modular plastic floor assembly comprising larger shaped tiles and smaller shaped connector tiles, wherein the shaped tiles only have first connector means and the shaped connector tiles only have second connector means complementary to the first connector means.

BRIEF DESCRIPTION OF THE INVENTION

In one form therefore, although this may not necessarily be the only or broadest form, the invention is said to reside in a modular plastic floor assembly formed from a plurality of shaped tiles and a plurality of shaped connector tiles, the shaped tiles being substantially
5 larger than the shaped connector tiles and the shaped connector tiles being adapted to fit into interstices between the shaped tiles when the floor assembly is formed, each of the shaped tiles and the shaped connector tiles including a body having a substantially planar upper surface and a support array extending from a lower surface of the body, the support array being integrally formed with the body and comprising items having a common length such
10 that their lower ends define a floor engaging plane, the shaped tiles having only a plurality of first connector means and the shaped connector tiles having only a plurality of complementary second type connector means, the first and second type connector means adapted to interengage to interlock the shaped tiles to adjacent shaped connector tiles.

15 Preferably the first and second type connector means are formed so that the shaped tiles and shaped connector tiles are spaced apart by a selected distance preferably 1 to 2 mm to take up shock load and thermal expansion and contraction.

There may be provided resiliently loaded fingers extending laterally on the shaped connector
20 tiles to space the shaped tiles and shaped connector tiles apart. Such resiliently loaded fingers may be provided by integrally moulding plastic springs into the tiles. Alternatively the resiliently loaded fingers may be on the shaped tiles to engage against the connector tiles in use or there may be a combination of the resiliently loaded fingers provided on both the shaped tiles and the connector tiles sharing shock load and thermal expansion and
25 contraction.

The support array may comprise a plurality of separated support walls which can be provided in a plurality of orientations such as triangles, squares or the like.

30 There may be further included a plurality of reinforcing structures under the body integrally formed with the body and being of lesser height than the common length and joining to the items having a common length.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A modular plastic floor assembly formed from a plurality of shaped tiles and a plurality of shaped connector tiles, the shaped tiles being substantially larger than the
5 shaped connector tiles and the shaped connector tiles being adapted to fit into interstices between the shaped tiles when the floor assembly is formed, each of the shaped tiles and the shaped connector tiles including a body having a substantially planar upper surface and a support array extending from a lower surface of the body, the support array being integrally formed with the body and comprising items having a common length such that their lower
10 ends define a floor engaging plane, the shaped tiles having only a plurality of first connector means and the shaped connector tiles having only a plurality of complementary second type connector means, the first and second type connector means adapted to interengage to interlock the shaped tiles to adjacent shaped connector tiles.
- 15 2. A modular plastic floor assembly as in Claim 1 wherein the first and second type connector means are formed so that the shaped tiles and shaped connector tiles are spaced apart by a distance of from 1 to 2 mm to take up shock load and thermal expansion and contraction.
- 20 3. A modular plastic floor assembly as in Claim 1 further including resiliently loaded fingers extending laterally from the shaped connector tiles to space the shaped tiles and shaped connector tiles apart.
4. A modular plastic floor assembly as in Claim 3 wherein the resiliently loaded fingers
25 include integrally moulding plastic springs.
5. A modular plastic floor assembly as in Claim 1 further including resiliently loaded fingers extending laterally from the shaped tiles to space the shaped tiles and shaped connector tiles apart.
30
6. A modular plastic floor assembly as in Claim 5 wherein the resiliently loaded fingers include integrally moulding plastic springs.

7. A modular plastic floor assembly as in Claim 1 wherein the support array includes a plurality of separated support walls.

8. A modular plastic floor assembly as in Claim 1 further including a plurality of reinforcing structures under the body integrally formed with the body and being of lesser height than the common length and joining to the items having a common length.

9. A modular plastic floor assembly as in Claim 8 wherein the reinforcing structures are squat cylinders or bosses.

10. A modular plastic floor assembly as in any one preceding claim wherein the shaped tiles are formed in a shape selected from circular, octagonal, dodecagon shaped, triangular hexagon or other convenient shapes.

11. A modular plastic floor assembly as in any one preceding claim wherein the shaped connector tiles are formed in a shape selected from circular, octagonal, dodecagons, triangles or hexagons or the like to fit into spaces between the shaped tiles.

12. A modular plastic floor assembly as in any one preceding claim wherein the sides of the shaped tiles are formed in a shape selected convex, straight or concave and the sides of the shaped connector tiles are correspondingly concave, straight or convex.

13. A modular plastic floor assembly as in any one preceding claim wherein the body has apertures through it to allow water to drain off the upper surface.

14. A modular plastic floor assembly as in any one preceding claim wherein each tile has a perimeter wall extending to the floor engaging plane to provide good support around the edge of the tile.

15. A modular plastic floor assembly as in Claim 14 wherein the perimeter walls include gaps to allow water drainage beneath the tiles.

24. A modular plastic floor assembly as in any one preceding claim wherein the substantially planar upper surface includes a surface film provided by in-mould decoration to provide a surface with changed appearance, frictional properties and/or surface hardness.

5 25. A modular plastic main floor tile adapted for use with a substantially smaller connector tile, the main tile including a body having a substantially planar upper surface and a support array extending from a lower surface of the body, the support array being integrally formed with the body and comprising items having a common length such that their lower ends define a floor engaging plane, the main tile having a plurality of only female
10 connector means adapted to connect with male connector means on an adjacent connector tile.

26. A modular plastic main floor tile as in Claim 25 wherein the female connector comprises an arcuate recess.

15 27. A modular plastic main floor tile as in Claim 25 wherein the arcuate recess includes catch means or tabs to provide positive retention of the male connector.

28. A modular plastic main floor tile as in Claim 25 further including resiliently loaded
20 fingers extending laterally from the tile to space the tiles from an adjacent connector tile.

29. A modular plastic main floor tile as in Claim 25 wherein the support array includes a plurality of separated support walls.

25 30. A modular plastic main floor tile as in Claim 25 wherein the tile is formed in a shape selected from circular, octagonal, dodecagon shaped, triangular hexagon or other convenient shapes.

31. A modular plastic main floor tile as in Claim 25 wherein the support array includes a
30 plurality of separated support walls composed of two materials, one material providing a rigid structural component of the tiles and the other material providing a shock absorbent element and being the portion which defines the floor engaging plane.

32. A modular plastic main floor tile as in Claim 25 wherein the substantially planar upper surface includes a surface film provided by in-mould decoration to provide a surface with changed appearance, frictional properties and/or surface hardness.

5 33. A modular plastic floor connector tile adapted for use with a substantially larger main tile, the connector tile including a body having a substantially planar upper surface and a support array extending from a lower surface of the body, the support array being integrally formed with the body and comprising items having a common length such that
10 their lower ends define a floor engaging plane, the connector tile having a plurality of only male connector means adapted to connect with female connector means on an adjacent main tile.

34. A modular plastic floor connector tile as in Claim 33 wherein the male connector means include a loop adapted to engage in a female arcuate recesses in the underside of the
15 main tile.

35. A modular plastic floor connector tile as in Claim 33 further including resiliently loaded fingers extending laterally from the tile to space the connector tile from an adjacent
20 main tile.

36. A modular plastic floor connector tile as in Claim 33 wherein the support array includes a plurality of separated support walls.

37. A modular plastic floor connector tile as in Claim 33 wherein the connector tile is
25 formed in a shape selected from circular, octagonal, dodecagon, triangle or hexagon or the like to fit into spaces between the main tiles.

38. A modular plastic floor connector tile as in Claim 33 wherein the support array includes a plurality of separated support walls composed of two materials, one material
30 providing a rigid structural component of the tiles and the other material providing a shock absorbent element and being the portion which defines the floor engaging plane.